T&E, Acquisition, and Requirements Communities Overview

April 2010

TEMAC T&E Refresher Course

Key Documentation

Acquisition:

DODD 5000.1, (12 May 03), The Defense Acquisition System

DODI 5000.2, (12 May 03), Operation of the Defense Acquisition S

AR 70-1, 31 Dec 03, Army Acquisition Policy

DA Pam 70-3, 15 Jul 99, Army Acquisition Procedures

Requirements:

CJCSI 3170.01, Joint Capabilities Integration & Development Syste

AR 71-9, 30 April 1997, Materiel Requirements

T&E:

AR 73-1, 1 Aug 06, T&E Policy

DA Pam 73-1, 30 May 03, T&E in Support of Systems Acquisition

AR 70-1 & DA Pam 70-3 Overvie

AR 70-1

- Provides discretionary guidance on materiel acquisition management
- Overview of the Acquisition Management Process
- Program definition, structure and design
- Program assessments and Decision Reviews
- Periodic reporting
- Career management for Army Acquisition Corps and Acquisition Workforce members

DA Pam 70-3

- Implements DoD 5000.1
- Governs research, development, acquisition, and Life Cycle Management of Army materiel
- Acquisition responsibilities for major and non-major systems, AIS, CIE and highly sensitive classified acquisition programs
- Army Acquisition Workforce policy and management
- Acquisition Review Forums
- Acquisition program organization and program design
- Type classification
- Modifications, upgrades and Horizontal Technology Integration

AR 71-9,TRADOC REG 71-20, and TRADOC PAM 71-20 Overview

AR 71-9

be updated based upon:

CJCSI 3170.01F, 1 May 07

CJCSM 3170.01C, 1 May 07

by HQDA (DCS, G-3)

TRADOC REGULATION

To replace TRADOC Pam 71-

Action Officer User Guides *

- **DOTMLPF Change Recommendati 15 Mar 07**
- **Force Design Update, 15 Mar 07**
- **Capability Based Assessment (**

* Located under 'Publications' at https://www.us.army.mil/suite/

AR 73-1 & Pam 73-1 Overview

AR 73-1

Overview of T&E management/planning

T&E Responsibilities

Testing:

- **Developmental**
- **Operational**

System Evaluation

T&E Considerations

T&E WIPT

TSARC

T&E Review and Reporting Requirements

T&E Budget and financial considerations

DA PAM 73-1

Introduction:

- **Overview of T&E Suppor**
- **Basic T&E Elements**

T&E Working-level IPT

TEMP development/approva

COIC (& KPP)

System evaluation

Testing:

- **Developmental**
- **Operational**
- **Certification**

PM's 'Phases of Action'

Requirements

↘

Acquisition Strategy

↘

System Development

↘

Test and Evaluation

↘

Field

↘

Operate & Sustain

Combat Developer's 'Focus'

- **Determining Requirements Across the DOTM**
  - ✓ **Concepts based on Strategic Guidance**
  - ✓ **Up-front Analysis supporting requirements determin**
  - ✓ **Operational and Organization Plan**
  - ✓ **Identify minimum essential requirements – KPP**
  - ✓ **Requirements Document Development (ICD, CDD, C**
- **User Representative during Requirements De System Development, and Test and Evaluatio**

T&E as a QA / QC Function

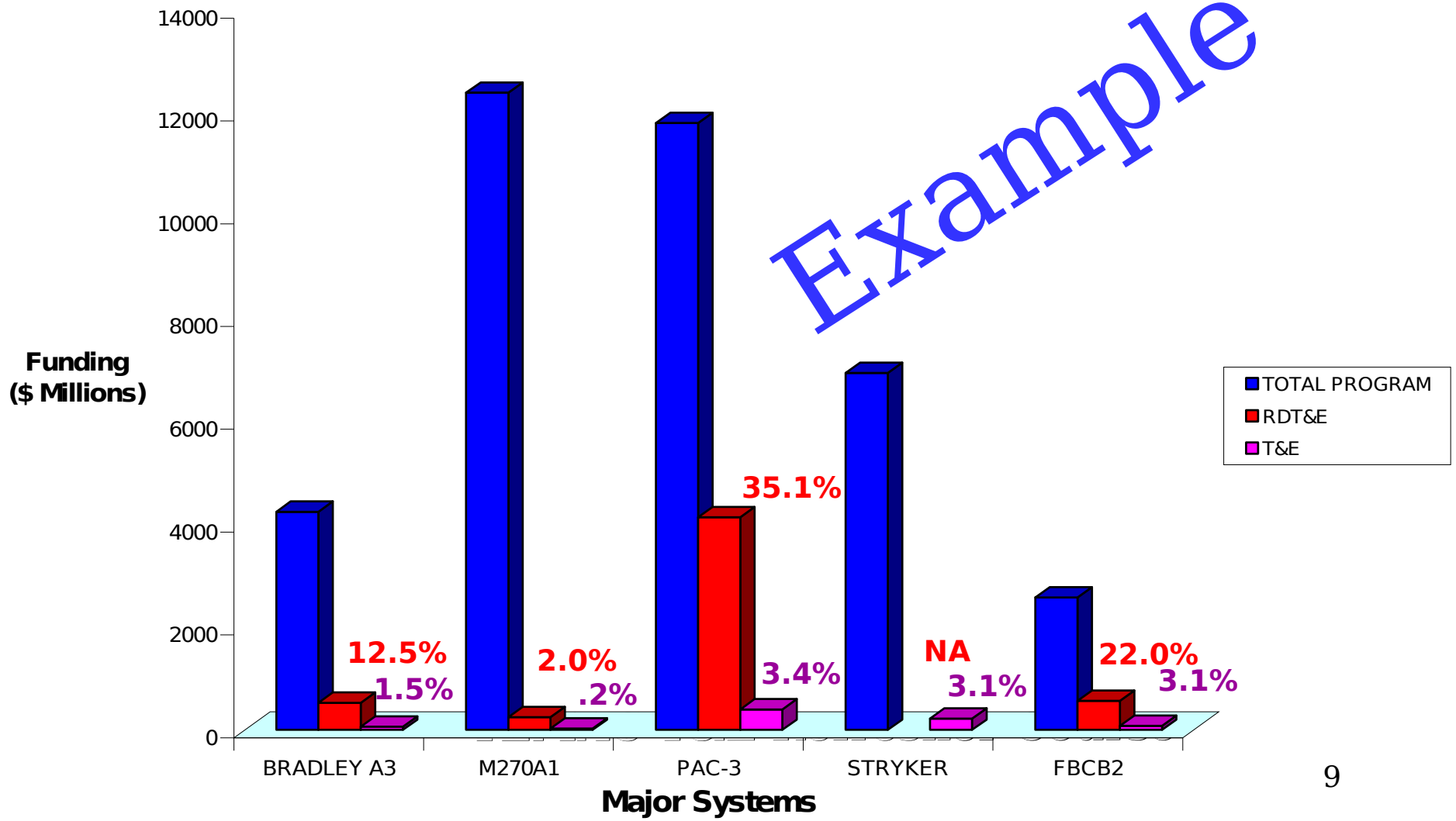
- **Provides a Risk Management and Mitigation**
  - **Function on Behalf of Decision-makers and**
  - **Stakeholders**

- **Provides a "Yard Stick" to Measure Progress**
  - **toward Required System Quality –**
  - **n**
  - **Effectiveness,**
  - **Suitability, Survivability)**

T&E Requirements Exist for All Programs

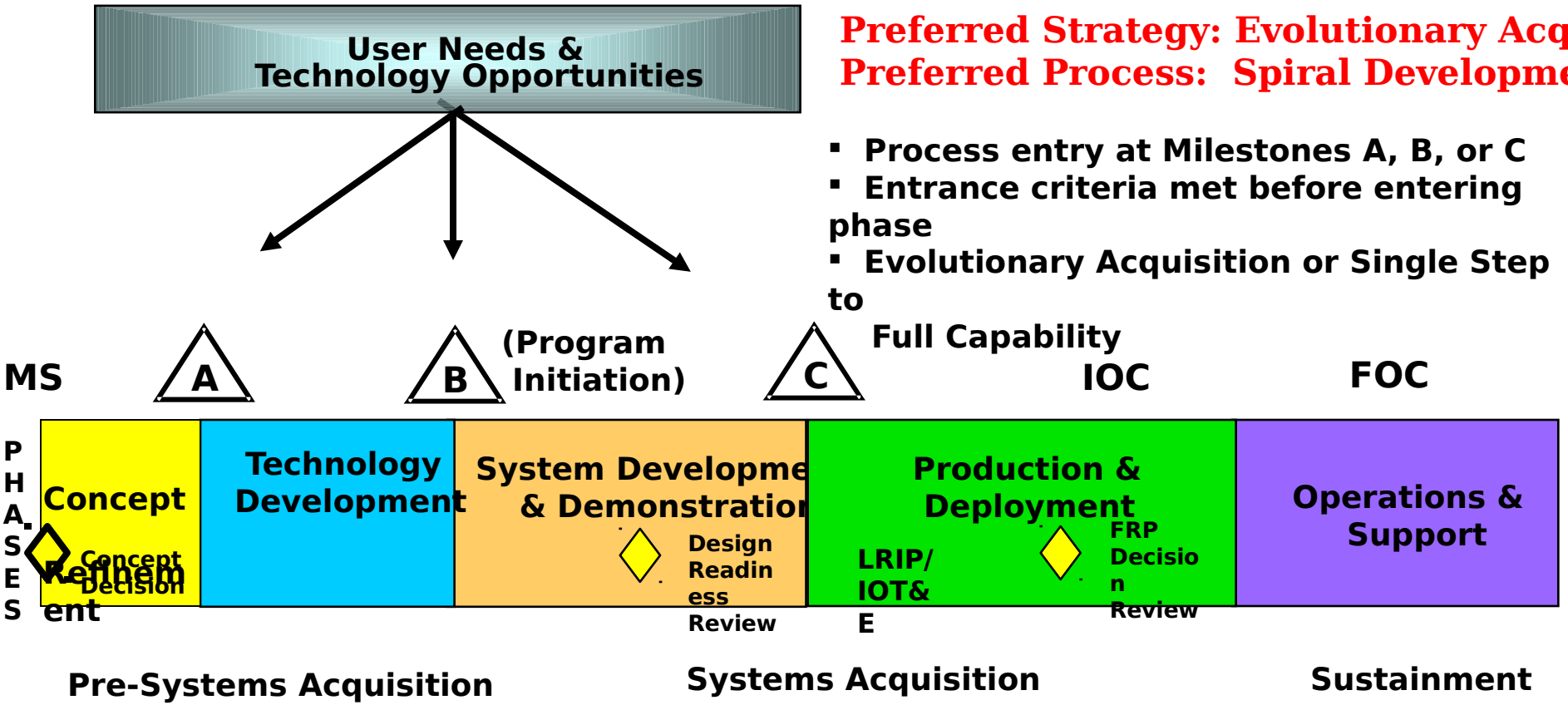
T & E Funds

Relative to RDT&E and Total Program Costs



DoD 5000 Model

(12 May 2003)

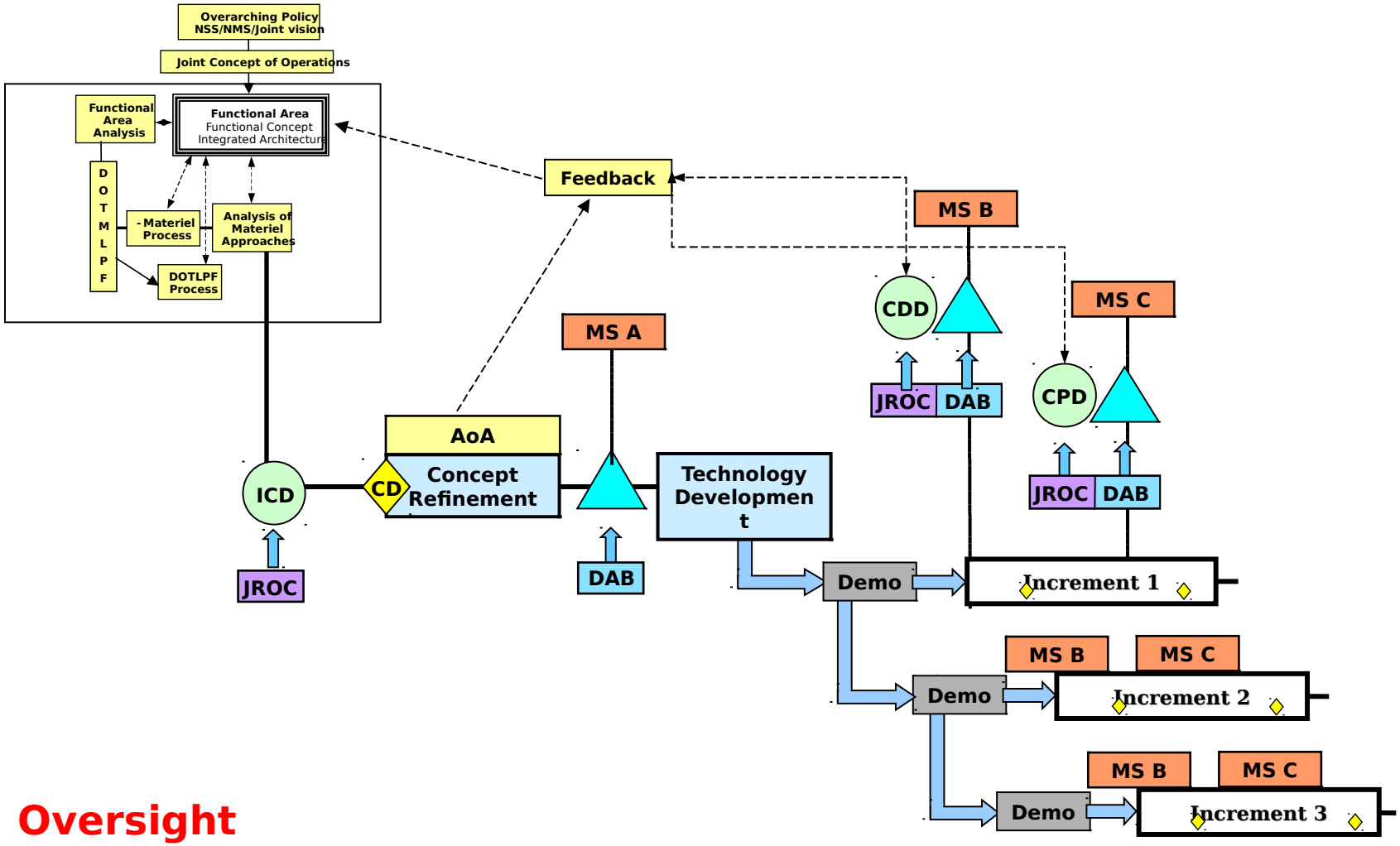


Preferred Strategy: Evolutionary Acqu
Preferred Process: Spiral Developme

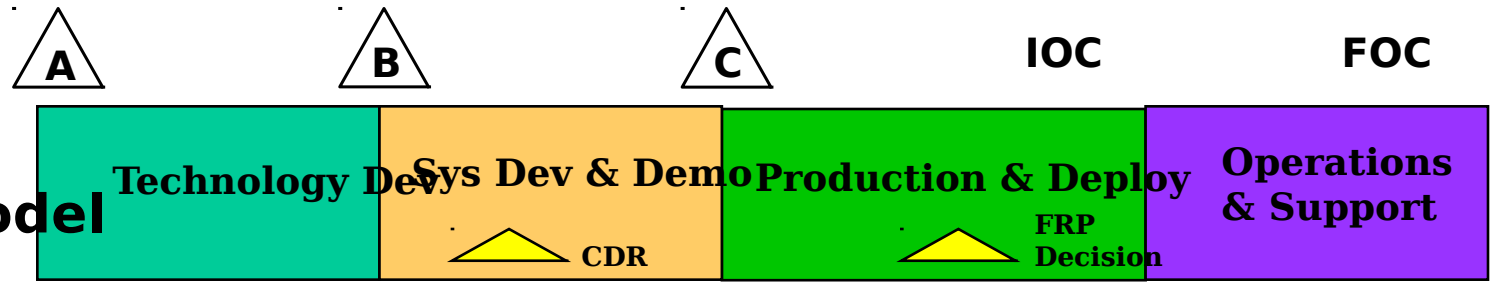
- Process entry at Milestones A, B, or C
- Entrance criteria met before entering phase
- Evolutionary Acquisition or Single Step to Full Capability

FRP - Full-Rate Production
LRIP - Low-Rate Initial Production

DODI 5000.2, Figure 2
Requirements and Acquisition Process Depic



T&E in Support of the Systems Acquisition Process



The 5000 Model

Continuous Evaluation

T&E Events
(AR 73-1)

ATD ACTD M&S Experiments TFT Analytical | EUT CEP M&S Studies FDT/E EDT | LFT DT/OT PPT | LFT LUT SQT IOT | M&S PVT | FOT LUT FAT | M&S ST | RT

TEMP *1/ * * * *

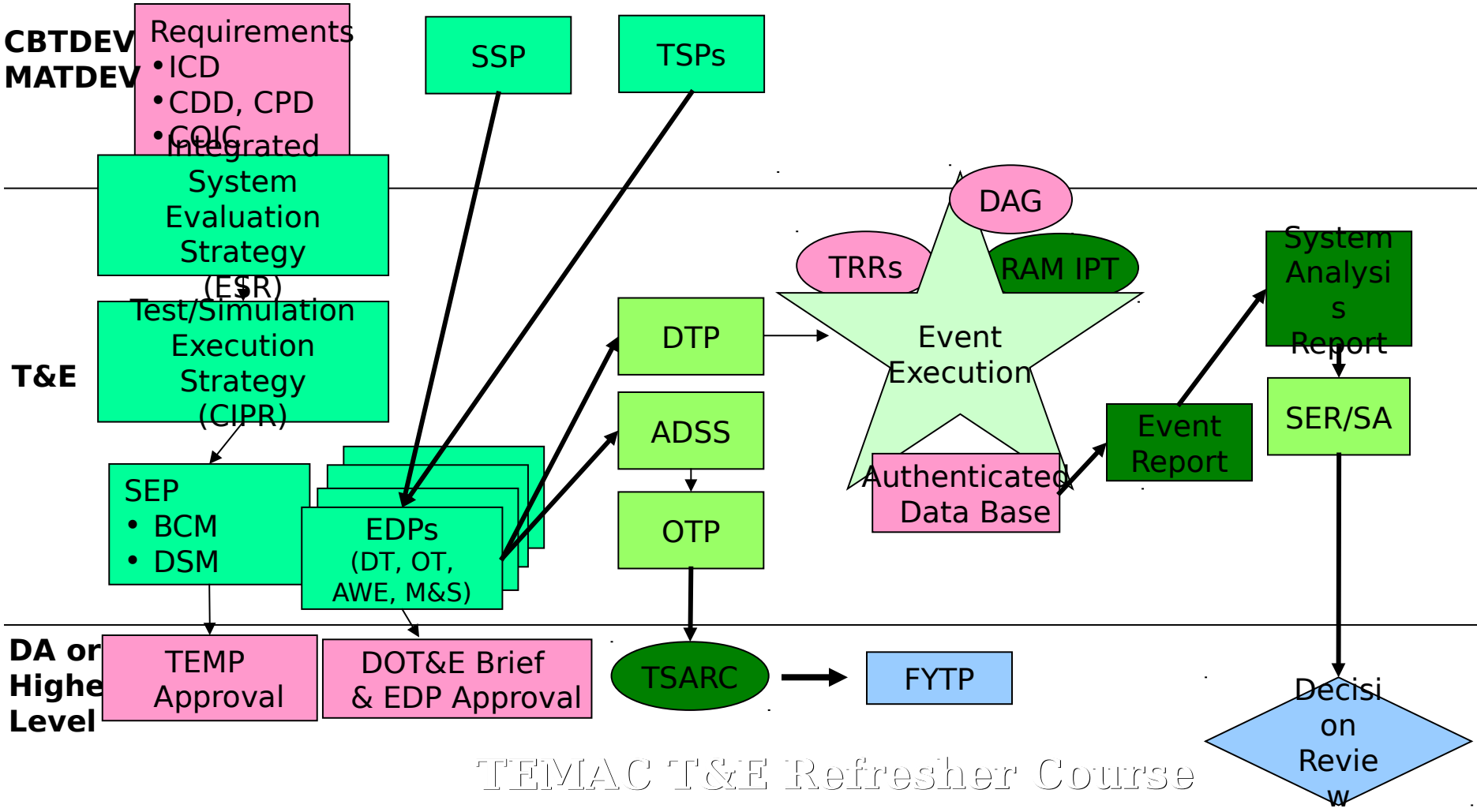
Sys Eval Reports:

OA				X			X
OA or ER			X		X		X

OA - Operational Assessment
SER - System Evaluation Report

1/ Test and Evaluation Strategy only/format not specified
2/ In support of Post-Deployment Performance Evaluation

The T&E "Cycle"


CBTDEV
MATDEV
Requirements
•ICD
•CDD, CPD
•COIC
SSP
TSPs
Integrated System Evaluation Strategy (ESR)
Test/Simulation Execution Strategy (CIPR)
T&E
SEP
• BCM
• DSM
EDPs (DT, OT, AWE, M&S)
DTP
ADSS
OTP
DAG
TRRs
RAM IPT
Event Execution
Authenticated Data Base
Event Report
System Analysis Report
SER/SA
DA or Higher Level
TEMP Approval
DOT&E Brief & EDP Approval
TSARC
FYTP
Decision Review

Why Review Requirements?

- **Requirements Documents are developed by the Comb Developer in coordination with the Acquisition Community bef and during the Technology Development Phase.**

- **System evaluator performs the following:**
  - **Verify the linkage between the ICD, CDD, CPD, and COI**
  - **Ensure Evaluator's understanding of the syste and its requirements (as measurable and testable)**
  - **Formulate an integrated mission & system leve**

Evaluator Must Know The Warfighting Syste

system's

employment
  - **Visualize the system in the hands of the user**

T&E in Support of Requirements Generation Process

During requirements reviews, ensure:

- ✓ **Audit trail back to the Mission Need**
- ✓ **Consistency**
- ✓ **Achievability**
- ✓ **Testability**
- ✓ **Measurability**

Acquisition Approaches
(per DODD 5000.1)

DOD Components shall work with users to define capability n that facilitate, in preferred order -

(1) Procurement/modification of commercially available products, serv technologies, from domestic or international sources, or the develo of dual-use technologies;

(2) Additional production/ modification of previously-developed U.S. an Allied military systems or equipment;

(3) Cooperative development program with one or more Allied nations;

(4) New joint Component or Government Agency development program

(5) New DoD Component-unique development program.

T&E Assists With All These Acquisition Approaches

DODD 5000.1
Acquisition Excerpts

1. **PMs shall establish program goals for the minin number of cost, schedule, & performance para that describe the program over its life cycle. (4**
2. **PMs shall identify deviations from approved ac program baseline parameters and exit criteria (**

T&E is Positive Support to the PM

DODI 5000.2
Acquisition Excerpts

In order to transition from a PEO to a commander of a systems, logistics, or materiel command, a program or increment of capability shall, at a minimum, have

- **Passed Initial Operational Capability (IOC),**
- **Achieved full-rate production,**
- **Be certified as interoperable within the intended operational environment, and**

T&E is an Enabler for Transition to Deploy

DODD 5000.1
Teamwork Excerpts

1. **MDAs and PMs shall encourage teamwork (4.3.3**

2. **Acquisition, capability needs, and financial comm and operational users shall maintain continuous communications with each other by using IPTs.**

3. **Teaming among warfighters, users, developers, a technologists, testers, budgeters, and sustainers during capability needs definition. (E1.2)**

4. **IPTs shall facilitate the management and exchan program information. (E1.20)**

DODI 5000.2
Teamwork Excerpts

1. **Approaches to achieve evolutionary acquisition require collaboration between the user, tester, and developer. (3.**

2. **PM, in concert with the user and test communities, shall DT&E, OT&E, LFT&E, family-of-systems interoperability t and M&S activities, into an efficient continuum, closely i with requirements definition and systems design and dev**

3. **T&E strategy shall provide information about risk and ris provide empirical data to validate M&S, evaluate techni and system maturity, and determine whether systems ar effective, suitable, and survivable against the threat deta System Threat Assessment. (E5.1)**

ACAT Categories & Authorities

ACQUISITION CATEGORY	Reason for Designation (in FY 2000 constant dollars)	Decision Authority
ACAT I	MDAP per 10 USC Section 2430: RDT&E > $365M or Procurement > $2.19B MDA designation - Special Interest	ACAT ID: USD(AT&L) ACAT IC: AAE
ACAT IA	MAIS: Single year program cost > $32 M; Total program cost . $126 M Total life-cycle costs > $378M MDA designation - Special Interest	ACAT IAM: ASD(C3I) or DOD CIO ACAT IAC: AAE, as delegated by the DOD CIO
ACAT II	Does not meet criteria for ACAT I Major system: RDT&E > $140M; Proc > $660M MDA designation - Special Interest	AAE or individual designated by AAE
ACAT III	Does not meet criteria for ACAT II (or above) Less than a MAIS program	Designated by the AAE at the lowest level appropriate

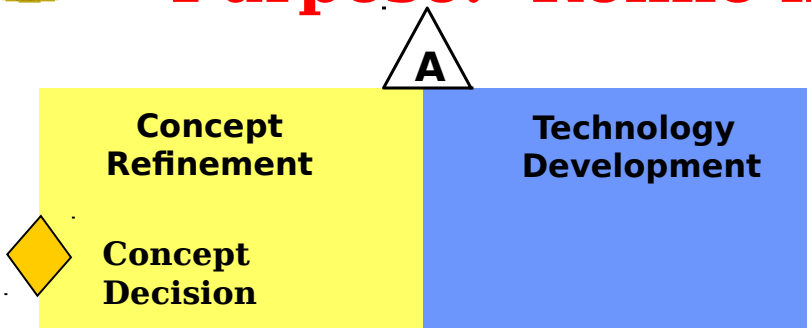
T&E for Army Systems

- **T&E planning begins early**
- **T&E WIPT shall be chartered ***
- **TEMP required with only a few exceptions**
- **An IOT required for ACAT I and II programs**
- **System Evaluation Plan will document the integrated evaluation strategy and overall test/ simulation execution strategy**
- **System Evaluation Report required for each acquisition milestone**
- **System Assessment provides input to non-milestone decisions**

*** T&E WIPT core members are combat developer, materiel dev & system evaluator**

Concept Refinement & Technology Development Phase

Purpose: Refine initial concept and reduce te



Concept Decision:
- Refine initial concept selected
- Approve AoA Plan
- Establish Milestone A date

Milestone A: Approve TDS

Concept Refinement Phase:
- Guided by ICD and AoA
- Refine initial concept
- Develop Technology Development Strategy (TDS)

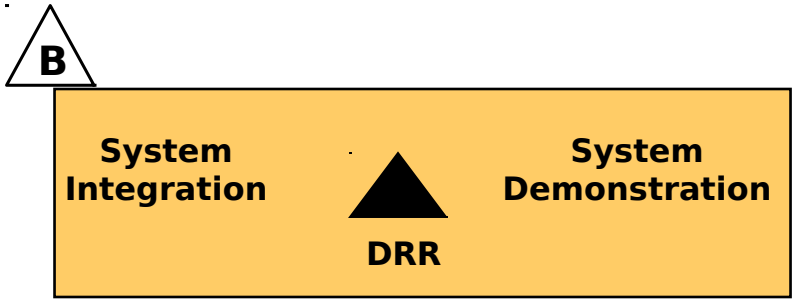
TDS consists of:
- Rationale for Evolutionary Acquisition
- Type of development: spiral or incremental
- Number of prototypes used during Technology Development Phase
- Test Plan ensuring goals & exit criteria for 1st spiral met

Technology Development Phase:
- Demonstrate technologies in relevant environments
- User prepares CDD & refines integrated architecture
- Prepare C4I Support Plan, if applicable
- Complete initial TEMP

Favorable MS A Does NOT Equate to a New Acquisition Program Has Been Initiated

System Development & Demonstration Phase

Purpose: Develop a system (or an increment o



Only One Milestone B per Program (or Increment)

Milestone B:

- Normally initiates an acquisition program
- Approves AS (to include TDS), APB, LRIP quantities and SD&D Phase Exit Criteria
- MAIS : CCA certification to DoD CIO

System Integration:

- Complete detailed design
- Demonstrate prototype articles(or EDMs)
- Reduce system-level risk thru integrating subsystems

Design Readiness Review: Mid-phase assessment of the system design maturity status

System Demonstration:

- Using selected prototype, demonstrate system's ability to operate in its intended (relevant or, preferably operational)environment
- M&S used to demonstrate system integration
- Successful DT&E assesses technical progress against Critical Technical Parameters (CTPs)
- Early Operational Assessments

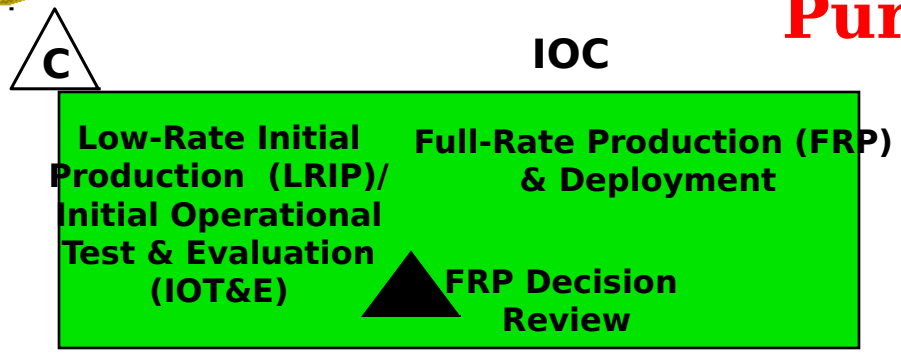
Entrance Criteria:

- Mature technology, including software
- Approved requirements in CDD
- Funding

Guided by Acquisition Strategy & TEMP

Production & Deployment Phase

Purpose: Achieve an operat capability that sa mission needs.


C
IOC
Low-Rate Initial Production (LRIP)/ Initial Operational Test & Evaluation (IOT&E)
Full-Rate Production (FRP) & Deployment
FRP Decision Review

Entrance Criteria for Milestone C:

- Acceptable performance in T&E and operational assessment
- Mature software capability
- Approved Capability Production Document
- Acceptable
  - : Interoperability
  - : Operational supportability
- No significant manufacturing risks
- Compliance with DOD Strategic Plan
- Demonstrate that affordable throughout the life-cycle
- Optimally funded
- Properly phased for rapid acquisition

Milestone C:

- Commit DoD to production
- Approve updated AS and APB
- Authorize entry into
  - : LRIP (MDAPs & Major systems)
  - : Production/procurement for non-major systems
  - : Limited MAIS deployment
- Approve LRIP Exit Criteria for OT

FRP Decision Review:

- Entry into full-rate production
- Updated AS and APB
- Provision for post-deployment peformance evaluation

Operations & Support Phase

Purpose: Execute a support prog
that meets operationa
performance requiren
sustainment of system
most cost-effective ma
the life-cycle of the pr

Sustainment of Systems:

- Maintain readiness and operational capability of deployed system
- Scope of supported fielded system includes:

  Supply, maintenance, transportation, manpower, safety, data management, configuration management, personnel, training, occupational health, sustaining engineering, environment, habitability, survivability, protection of critical program information (CPI), anti-tampering provisions, IT, and/or supportability and interoperability functions,

Disposal of Systems:

Demilitarization requirements and disposal requirements IAW all legal & regulatory requirements and policy -

: Safety
: Security
: Environment

Commercial and NDI T&E

- **T&E WIPT must be established**
- **Approved TEMP will adhere to same policies & procedures for new acquisition T&E programs**
- **Make maximum use of prior test information**
- **Information from market investigations results may be used to satisfy some evaluation requireme**

DODI 5000.2, Para E5.1.4.3

Test planning for commercial and NDI items shall recognize commercial testing and experience, but nonetheless determine the appropriate DT&E, OT&E, and LFT&E needed to ensure effective performance in the intended operational environment.

Acknowledgement & Feedback

This module is a part of the T&E Managers Committee (TEMAC) T&E Refresher Course.

Request your feedback. Please contact -

T&E Office
Deputy Under Secretary of the Army
102 Army Pentagon
Washington, D.C. 20310-0102
(703) 602-3508 / 2134 DSN: 332